

**Board of County Commissioners
Agenda Item Summary**

Meeting Date: January 19, 2005
Bulk Item: Yes ☐ No ☒

Division: Board of County Commissioners
Department: **George R. Neugent**

AGENDA ITEM WORDING:

Discussion with the Board of County Commissioners to address a request from Bay Point residents to research the use of existing septic tanks to be used as cisterns to collect rain water run-off for irrigation purposes.

ITEM BACKGROUND:

Request staff to provide input and any collected data on this issue.

PREVIOUS RELEVANT BOCC ACTION:

CONTRACT/AGREEMENT CHANGES:

STAFF RECOMMENDATIONS:

TOTAL COST:

BUDGETED: YES ☐ NO ☐

COST TO COUNTY: \$

NA

Source of Funds: _____

REVENUE PRODUCING: YES ☐ NO ☒ **AMT PER MONTH:** **YEAR:**

APPROVED BY: COUNTY ATTY ☐ OMB/PURCHASING ☐ RISK MANAGEMENT ☐

APPROVAL:


Commissioner GEORGE R. NEUGENT
DISTRICT II

DOCUMENTATION: INCLUDED ☒ TO FOLLOW ☐ NOT REQUIRED ☐

DISPOSITION:

AGENDA ITEM # 05

PROPOSAL

INTRODUCTION:

The Bay Point Area is in the process of receiving a municipal sanitary sewer system to replace individual wastewater treatment systems (aerobic, anaerobic, and cesspools). Current mandate by virtue of Florida Administrative Code 64E-6.011 is to "decommission" existing individual septic tanks (puncture the bottom and fill with sand/gravel) after hookup to the new sewer facilities. A number of Bay Point residents with aerobic or anaerobic septic tanks wish instead to convert these tanks to cisterns that collect rainwater to be used for garden irrigation. Cesspools are of course not part of this proposal.

RATIONALE:

There are many good reasons for such a conversion, among them are:

1. Water conservation in the Florida Keys is a serious problem. All water imported from the mainland aquifers is eventually discharged into the ocean and lost. Conservation efforts - even in drought years - have not been very successful. Since some of this precious aquifer water is used for irrigation, increased use of cisterns would lessen the demand on that source of water.
2. Conversion to cisterns would also improve storm water management. Runoff could be collected instead of acting as sheet flow over the ground, thus reducing erosion and transport of unwanted materials into near shore waters.
3. FKAA water is expensive. Residents who convert would save money by having a source of free non-potable water for landscape watering. This would ameliorate the overall heavy individual costs of the sewerage project.
4. The conversion to cisterns in older homes would bring them into alignment with newer homes that have cisterns due to ROGO point motivation.
5. This free water might encourage residents to plant and maintain landscaping, which in turn would also reduce erosion.
6. Additional landscaping would improve community aesthetics and serve as essential habitat for native animals and migrating birds.
7. There is a substantial cost associated with proper certified decommissioning of existing individual wastewater systems. With properly constructed standards, the cost for conversion could be lower.
8. Septic systems are ubiquitous in the Keys, and the Keys are under mandate to install wastewater treatment systems. Therefore conversion to cisterns could be widely encouraged if standard procedures existed.

OVERRIDING CONCERN:

However, arguably, the most important reason in the minds of many of the Bay Point residents is the great risk of contamination of the area if such a conversion is NOT done. All of the Bay Point area has an elevation of between three and four feet above mean sea level. The small distance of every tank from open seawater means that the water table is also about 3 - 4 ft. below the ground. The water table changes with daily, monthly, and seasonal tides. The existing septic tanks extend to a depth of five feet or more below ground. The current practice of decommissioning creates a situation where the changing water table would cause continuous leaching of bacteria and other human waste contaminants into the ground. This contamination would eventually reach the open water and also the ground surface, risking all Bay Point residents to exposure.

CONVERSION PROCEDURE:

Since there does not at present exist an approved uniform procedure to convert septic tanks to cisterns, the following steps are the proposed detailed procedure to safely disconnect, disinfect, and convert the septic tanks.

1. Disconnect tank input pipe. (This will be done at the time that the dwelling is connected to the new sewer system.)
2. Pump out tank completely (by approved septic tank pump truck)
3. Disconnect drain field or shallow well and permanently seal pipe penetration openings.

NOTE: The first three steps are necessary and identical to what would happen if the tank were decommissioned.

4. Fill tank with water.
5. Add sufficient chlorine to achieve 200ppm concentration.
6. Check chlorine concentration after 24 hours.
 - If below 50ppm residual, repeat chlorine shock to 200ppm (repeat step 5)
 - If 50ppm or higher, allow to stand an additional 48 hours.
7. After successful step 6, check residual chlorine concentration.
 - If less than 10ppm remain, increase to 50ppm and let stand an additional 48 hours.
 - If at least 10ppm remain, tank is totally disinfected.
8. Perform any tests for the presence of enteric bacteria, E-coli, etc.) specified by Health Department to assure safety of use for irrigation.
9. Install shallow well pump and appropriate plumbing to allow connection of garden hoses.
10. Install plumbing to allow filling tank from collected rainwater.
11. Install signs warning that irrigation water is not potable on any faucet that is fed from tank.
12. Perform a second test for harmful organisms one year after cistern is put in service.

BASIS FOR THE PROPOSED DISINFECTING PROCEDURE:

The closest analogy (in terms of a disinfecting situation) to what Bay Point residents want to do are existing procedures used after a flood to disinfect wells supplying drinking water or to disinfect cisterns used for drinking water. A number of states and/or municipalities, which are in potential flood areas, have such procedures. After a flood, often such wells or cisterns are contaminated with human and animal fecal matter and other contaminants. The disinfecting method advanced here by Bay Point residents parallels such procedures, but specifies a concentration of chlorine that is greater than specified by others for assuring that water is disinfected sufficiently for safe human consumption after a flood. Additionally our proposed disinfection (chlorine contact) time is at least four times as long as that usually specified. Such "overkill" should assure that the water stored and used in the Bay Point cisterns is completely safe. However this proposal is even more conservative since it stresses that the water will be used only for garden irrigation, not drinking.

CONCLUSION:

The undersigned propose to convert their septic tanks to cisterns by disinfecting them with the extremely effective procedure outlined and by fitting them with plumbing which will allow irrigation of their plants and flowers. Because of the significant advantages of such a conversion and because of the potential danger in not converting, it is further proposed that the above procedure be officially adopted by the Health Department and publicized by them so that such conversion is encouraged throughout the Keys as other areas are impacted by the mandated sewerage. It is further proposed that in areas where the water table is close to – or worse yet – above the level of the bottom of septic tanks whose use is about to be discontinued, the dangerous practice of "abandonment" be discouraged or forbidden.

Francis Wagner
Harry S. Schaeffer
Owen Trepanier
Jerry Wellen
Scott Morris